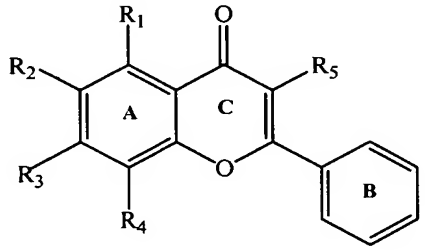
CLAIMS

1. A method for preventing and treating cyclooxygenase (COX) and lipoxygenase (LOX) mediated diseases and conditions of the skin, said method comprising administering to a host in need thereof an effective amount of a pharmaceutical composition comprising a mixture of at least one Free-B-ring flavonoid and at least one flavan.

2. The method of claim 1 wherein the ratio of Free-B-Ring flavonoid to flavan in said composition is selected from the range of 99:1 Free-B-Ring flavonoid:flavan to 1:99 of Free-B-Ring flavonoid:flavan.

3. The method of claim 2 wherein the ratio of Free-B-Ring flavonoid:flavan in the composition of matter is about 20:80.

4. The method of claim 1 wherein said Free-B-Ring flavonoid is selected from the group of compounds having the following structure:



wherein

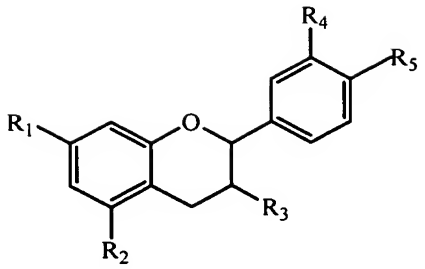
R_1, R_2, R_3, R_4, and R_5 are independently selected from the group consisting of -H, -OH, -SH, -OR, -SR, $-NH_2$, -NHR, $-NR_2$, $-NR_3^+X^-$, a carbon, oxygen, nitrogen or sulfur, glycoside of a single or a combination of multiple sugars including, aldopentoses, methyl-aldopentose, aldohexoses, ketohexose and their chemical derivatives thereof;

wherein

R is an alkyl group having between 1-10 carbon atoms; and

X is selected from the group of pharmaceutically acceptable counter anions including, hydroxyl, chloride, iodide, sulfate, phosphate, acetate, fluoride and carbonate.

5. The method of claim 1 wherein said flavan is selected from the group of compounds having the following structure:



wherein

R_1, R_2, R_3, R_4 and R_5 are independently selected from the group consisting of H, -OH, -SH, $-OCH_3$, $-SCH_3$, -OR, -SR, $-NH_2$, -NRH, $-NR_2$, $-NR_3^+X^-$, esters of substitution groups, independently selected from the group consisting of gallate, acetate, cinnamoyl and hydroxyl-cinnamoyl esters, trihydroxybenzoyl esters and caffeoyl esters; a carbon, oxygen, nitrogen or sulfur glycoside of a single or a combination of multiple sugars including, aldopentoses, methyl aldopentose, aldohexoses, ketohexose and their chemical derivatives thereof; dimer, trimer and other polymerized flavans;

wherein

R is an alkyl group having between 1-10 carbon atoms ; and

X is selected from the group of pharmaceutically acceptable counter anions including, but not limited to hydroxyl, chloride, iodide, sulfate, phosphate, acetate, fluoride, carbonate.

6. The method of claim 1 wherein said Free-B-Ring flavonoid and said flavan are obtained by organic synthesis or are isolated from a plant.

7. The method of claim 6 wherein said Free-B-Ring flavonoid and said flavan are isolated from a plant part selected from the group consisting of stems, stem barks, trunks, trunk barks, twigs, tubers, roots, root barks, young shoots, seeds, rhizomes, flowers and other reproductive organs, leaves and other aerial parts.

8. The method of claim 6 wherein said Free-B-Ring flavonoid is isolated from a plant family selected from the group consisting of *Annonaceae, Asteraceae, Bignoniaceae, Combretaceae, Compositae, Euphorbiaceae, Labiatae, Lauranceae,*

Leguminosae, Moraceae, Pinaceae, Pteridaceae, Sinopteridaceae, Ulmaceae and *Zingiberacea.*

9. The method of claim 6 wherein said Free-B-Ring flavonoid is isolated from a plant genus selected from the group consisting of *Desmos, Achyrocline, Oroxylum, Buchenavia, Anaphalis, Cotula, Gnaphalium, Helichrysum, Centaurea, Eupatorium, Baccharis, Sapium, Scutellaria, Molsa, Colebrookea, Stachys, Origanum, Ziziphora, Lindera, Actinodaphne, Acacia, Derris, Glycyrrhiza, Millettia, Pongamia, Tephrosia, Artocarpus, Ficus, Pityrogramma, Notholaena, Pinus, Ulmus* and *Alpinia.*

10. The method claim 6 wherein said flavan is are isolated from a plant species selected from the group consisting of the *Acacia catechu, Acacia concinna, Acacia farnesiana, Acacia Senegal, Acacia speciosa, Acacia arabica, A. caesia, A. pennata, A. sinuata. A. mearnsii, A. picnantha, A. dealbata, A. auriculiformis, A. holoserecia* and *A. mangium.*

11. The method of claim 6 wherein said Free-B-ring flavonoid is isolated from a plant or plants in the *Scutellaria* genus of plants and said flavan is isolated from a plant or plants in the *Acacia* genus of plants.

12. The method of claim 1 wherein the composition is administered in a dosage selected from 0.001 to 200 mg/kg of body weight.

13. The method of claim 1 wherein the composition is administered in a pharmaceutical, dermatological or cosmetic formulation comprised of approximately 0.001 weight percent (wt %) to 40.0 wt % of the mixture of Free-B-Ring flavonoids and flavans in a pharmaceutically, dermatologically and cosmetically acceptable carrier.

14. The method of claim 1 wherein the routes of the administration are selected from the group consisting of topical, aerosol, suppository, intradermic, intramusclar, and intravenous administration.

15. The method of claim 14 wherein the route of the administration is topical.

16. The method of claim 15 wherein the composition is administered using a nonsticking gauze, a bandage, a swab, a cloth wipe, a patch, a mask, a protectant, a cleanser, an antiseptic, a solution, a cream, a lotion, an ointment, a gel or an emulsion, a liquid, a paste, a soap, or a powder.

17 The method of claim 1 wherein the pharmaceutical composition is further comprised of a conventional excipient that is pharmaceutically, dermatologically and cosmetically suitable for topical application and optionally an adjuvant, and/or a carrier, and/or a regular or controlled releasing vehicle.

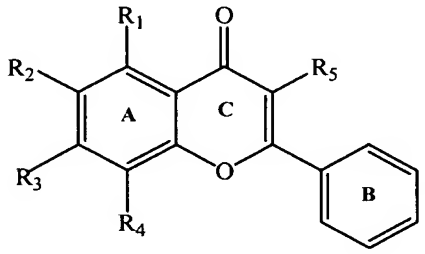
18. The method of claim wherein the COX and LOX mediated diseases and conditions of the skin are selected from the group consisting of sun burns, thermal burns, acne, topical wounds, minor inflammatory conditions caused by fungal, microbial and viral infections, vitilago, systemic lupus erythromatosus, psoriasis, carcinoma, melanoma, as well as other mammal skin cancers, skin damage resulting from exposure to ultraviolet (UV) radiation, chemicals, heat, wind and dry environments, wrinkles, saggy skin, lines and dark circles around the eyes, dermatitis and other allergy related conditions of the skin.

19. A pharmaceutical composition of matter for use in the prevention and treatment of diseases and conditions related to the skin comprised of a mixture of at least one Free-B-ring flavonoid and at least one flavan.

20. The pharmaceutical composition of claim 19 wherein the ratio of Free-B-Ring flavonoid to flavan in said composition is selected from the range of 99:1 Free-B-Ring flavonoid:flavan to 1:99 of Free-B-Ring flavonoid:flavan.

22. The pharmaceutical composition of 20 wherein the ratio of Free-B-Ring flavonoid:flavan in the composition of matter is about 20:80.

23. The pharmaceutical composition of claim 19 wherein said Free-B-Ring flavonoid is selected from the group of compounds having the following structure:



wherein

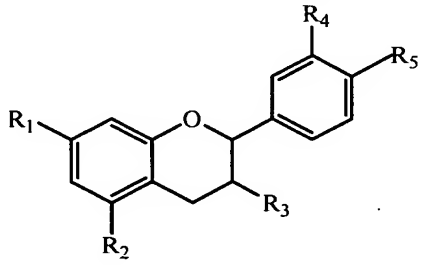
R_1, R_2, R_3, R_4, and R_5 are independently selected from the group consisting of -H, -OH, -SH, -OR, -SR, $-NH_2$, -NHR, $-NR_2$, $-NR_3^+X^-$, a carbon, oxygen, nitrogen or sulfur, glycoside of a single or a combination of multiple sugars including, aldopentoses, methyl-aldopentose, aldohexoses, ketohexose and their chemical derivatives thereof;

wherein

R is an alkyl group having between 1-10 carbon atoms; and

X is selected from the group of pharmaceutically acceptable counter anions including, hydroxyl, chloride, iodide, sulfate, phosphate, acetate, fluoride and carbonate.

24. The pharmaceutical composition of claim 19 wherein said flavan is selected from the group of compounds having the following structure:



wherein

R_1, R_2, R_3, R_4 and R_5 are independently selected from the group consisting of H, -OH, -SH, $-OCH_3$, $-SCH_3$, -OR, -SR, $-NH_2$, -NRH, $-NR_2$, $-NR_3^+X^-$, esters of substitution groups, independently selected from the group consisting of gallate, acetate, cinnamoyl and hydroxyl-cinnamoyl esters, trihydroxybenzoyl esters and caffeoyl esters; a carbon, oxygen, nitrogen or sulfur glycoside of a single or a combination of multiple sugars

including, aldopentoses, methyl aldopentose, aldohexoses, ketohexose and their chemical derivatives thereof; dimer, trimer and other polymerized flavans;

wherein

R is an alkyl group having between 1-10 carbon atoms ; and

X is selected from the group of pharmaceutically acceptable counter anions including, but not limited to hydroxyl, chloride, iodide, sulfate, phosphate, acetate, fluoride, carbonate.

25. The pharmaceutical composition of claim 19 wherein said Free-B-Ring flavonoid and said flavan are obtained by organic synthesis or are isolated from a plant.

26. The pharmaceutical composition of claim 25 wherein said Free-B-Ring flavonoid and said flavan are isolated from a plant part selected from the group consisting of stems, stem barks, trunks, trunk barks, twigs, tubers, roots, root barks, young shoots, seeds, rhizomes, flowers and other reproductive organs, leaves and other aerial parts.

27. The pharmaceutical composition of claim 25 wherein said Free-B-Ring flavonoid is isolated from a plant family selected from the group consisting of *Annonaceae, Asteraceae, Bignoniaceae, Combretaceae, Compositae, Euphorbiaceae, Labiatae, Lauranceae, Leguminosae, Moraceae, Pinaceae, Pteridaceae, Sinopteridaceae, Ulmaceae* and *Zingiberacea*.

28. The pharmaceutical composition of claim 25 wherein said Free-B-Ring flavonoid is isolated from a plant genus selected from the group consisting of *Desmos, Achyrocline, Oroxylum, Buchenavia, Anaphalis, Cotula, Gnaphalium, Helichrysum, Centaurea, Eupatorium, Baccharis, Sapium, Scutellaria, Molsa, Colebrookea, Stachys, Origanum, Ziziphora, Lindera, Actinodaphne, Acacia, Derris, Glycyrrhiza, Millettia, Pongamia, Tephrosia, Artocarpus, Ficus, Pityrogramma, Notholaena, Pinus, Ulmus* and *Alpinia*.

29. The pharmaceutical composition of claim 25 wherein said flavan is are isolated from a plant species selected from the group consisting of the *Acacia catechu*,

Acacia concinna, *Acacia farnesiana*, *Acacia Senegal*, *Acacia speciosa*, *Acacia arabica*, *A. caesia*, *A. pennata*, *A. sinuata*. *A. mearnsii*, *A. picnantha*, *A. dealbata*, *A. auriculiformis*, *A. holoserecia* and *A. mangium*.

30. The pharmaceutical composition of claim 25 wherein said Free-B-ring flavonoid is isolated from a plant or plants in the *Scutellaria* genus of plants and said flavan is isolated from a plant or plants in the *Acacia* genus of plants.

31. The pharmaceutical composition of claim 19 further comprising a pharmaceutically acceptable excipient and optionally an adjuvant or a carrier.

32. The pharmaceutical composition of claim 19, wherein said composition is formulated for topical application.

33. The pharmaceutical composition of claim 19 where said composition is formulated in a regular or controlled releasing vehicle.

34. A method for simultaneously inhibiting the enzymatic activity of the COX and LOX enzymes in the skin comprised of administering to a host in need thereof an effective amount of a pharmaceutical composition comprised of a mixture of at least one Free-B-Ring flavonoids and one flavan.

35. The method of claim 34 wherein the pharmaceutical composition is administered in a pharmaceutical, dermatological or cosmetic formulation comprised of approximately 0.001 weight percent (wt %) to 40.0 wt % of the mixture of Free-B-Ring flavonoids and flavans in a pharmaceutically, dermatologically and cosmetically acceptable carrier.

36. The method of claim 34 wherein the routes of the administration are selected from the group consisting of topical, aerosol, suppository, intradermic, intramusclar, and intravenous administration.

37. The method of claim 36 wherein the route of the administration is topical.

38. The method of claim 34 wherein the pharmaceutical composition is administered using a nonsticking gauze, a bandage, a swab, a cloth wipe, a patch, a mask, a protectant, a cleanser, an antiseptic, a solution, a cream, a lotion, an ointment, a gel or an emulsion, a liquid, a paste, a soap, or a powder.

39 The method of claim 34 wherein the pharmaceutical composition is further comprised of a conventional excipient that is pharmaceutically, dermatologically and cosmetically suitable for topical application and optionally an adjuvant, and/or a carrier, and/or a regular or controlled releasing vehicle.

40. A method for improving mammal skin appearance mediated by COX and LOX pathways comprising administering to a host in need thereof an effective amount of a composition comprising a mixture of at least one Free-B-Ring flavonoid and at least one flavan.

41. The method of claim 40 wherein the pharmaceutical composition is administered in a pharmaceutical, dermatological or cosmetic formulation comprised of approximately 0.001 weight percent (wt %) to 40.0 wt % of the mixture of Free-B-Ring flavonoids and flavans in a pharmaceutically, dermatologically and cosmetically acceptable carrier.

42. The method of claim 40 wherein the routes of the administration are selected from the group consisting of topical, aerosol, suppository, intradermic, intramusclar, and intravenous administration.

43. The method of claim 42 wherein the route of the administration is topical.

44. The method of claim 40 wherein the pharmaceutical composition is administered using a nonsticking gauze, a bandage, a swab, a cloth wipe, a patch, a mask, a protectant, a cleanser, an antiseptic, a solution, a cream, a lotion, an ointment, a gel or an emulsion, a liquid, a paste, a soap, or a powder.

45 The method of claim 40 wherein the pharmaceutical composition is further comprised of a conventional excipient that is pharmaceutically, dermatologically and cosmetically suitable for topical application and optionally an adjuvant, and/or a carrier, and/or a regular or controlled releasing vehicle.